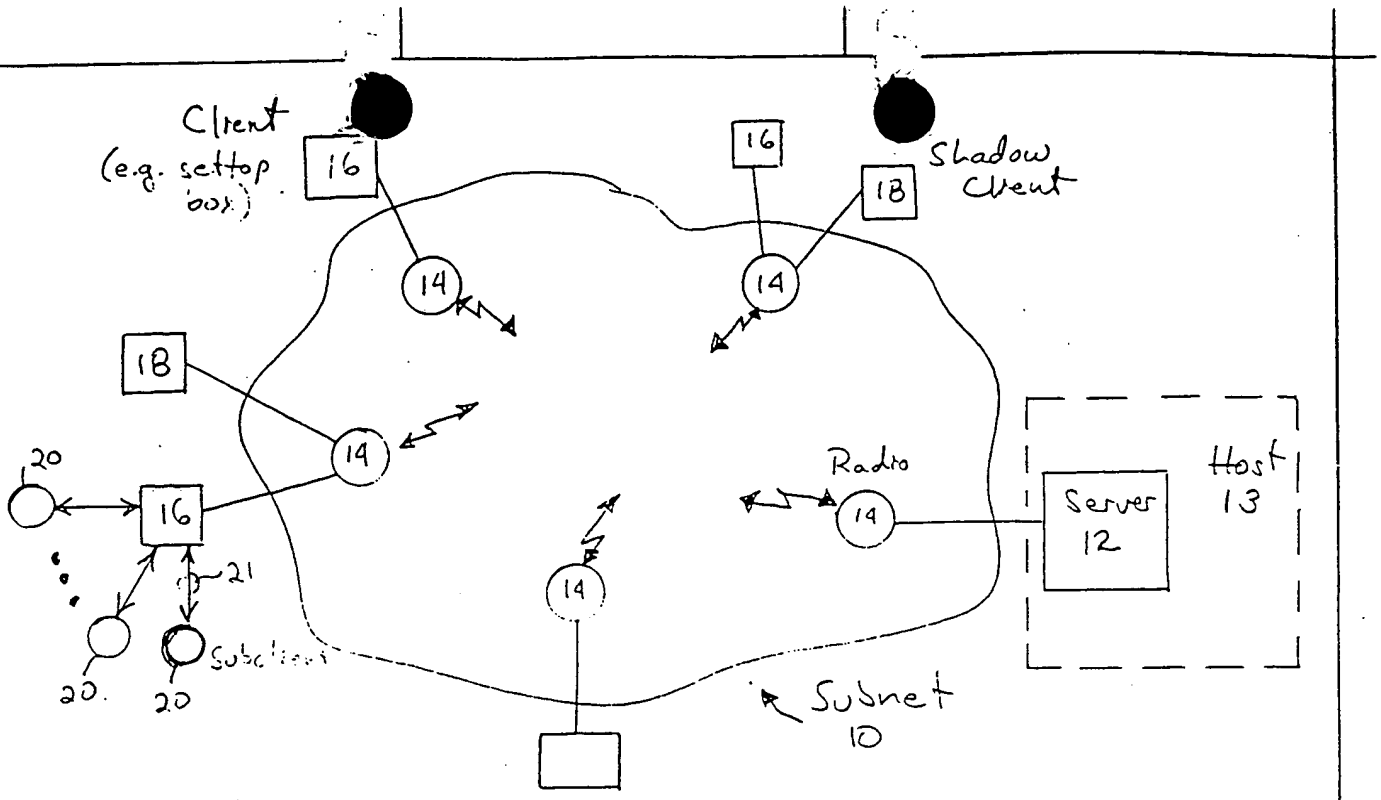


Fig. 1

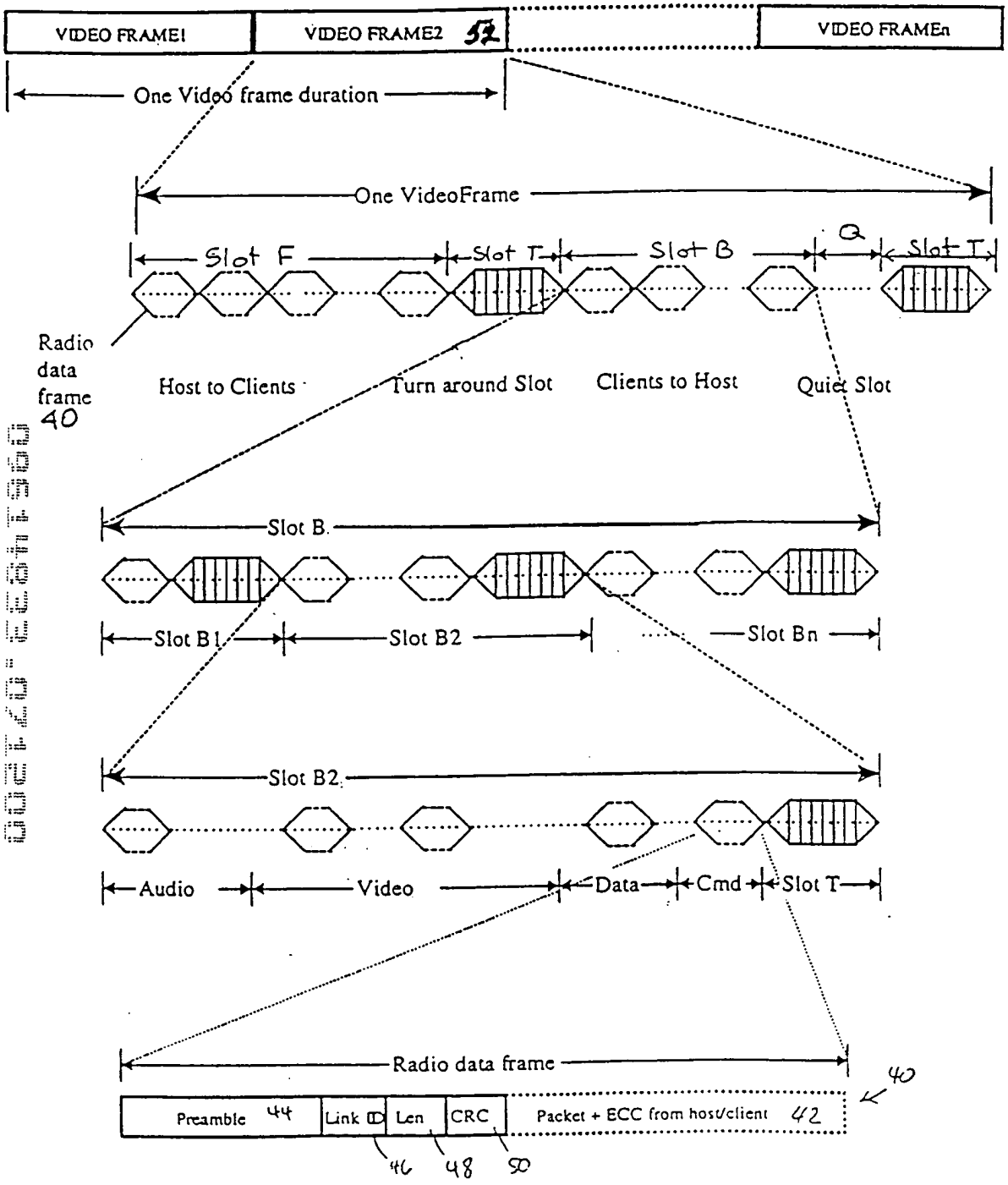
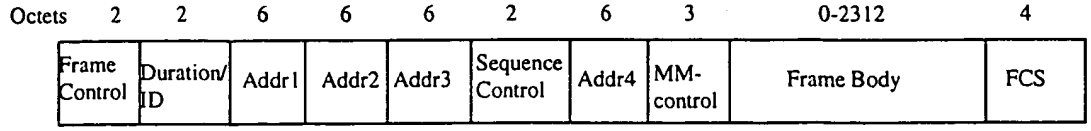
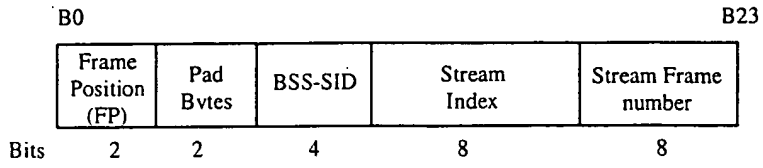

VIDEO FRAME1
VIDEO FRAME2
52
VIDEO FRAMEn
One Video frame duration
One VideoFrame
Slot F
Slot T
Slot B
Q
Slot T
Radio data frame 40
Host to Clients
Turn around Slot
Clients to Host
Quiet Slot
Slot B.
Slot B1
Slot B2
Slot Bn
Slot B2
Audio
Video
Data
Cmd
Slot T
Radio data frame
40
Preamble 44
Link ID
Len
CRC
Packet + ECC from host/client 42
46
48
50

Figure 2



(a) Multimedia frame format



(b) Multimedia Control field (proposed new field)

Figure 3

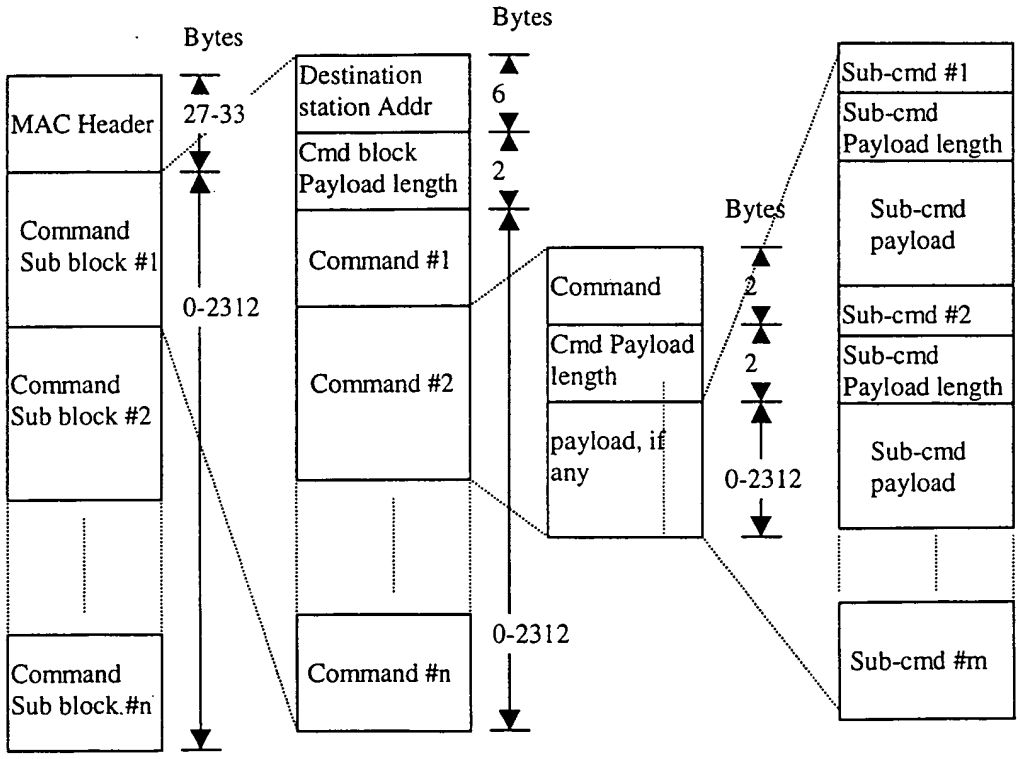


Figure 4. Structure of the multimedia commands and sub-commands in MM-command frame

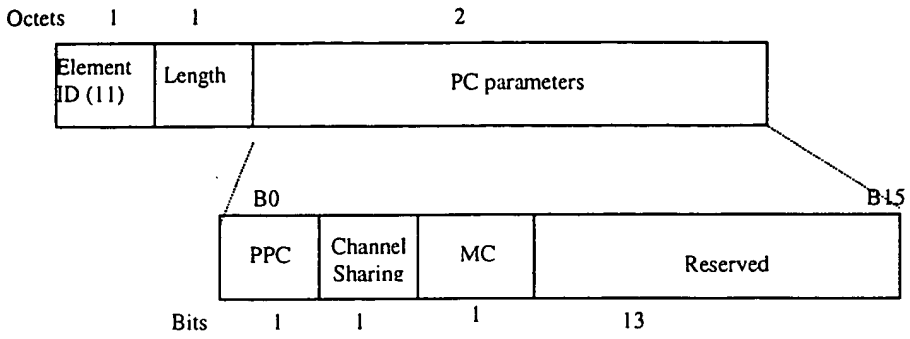


Figure 5

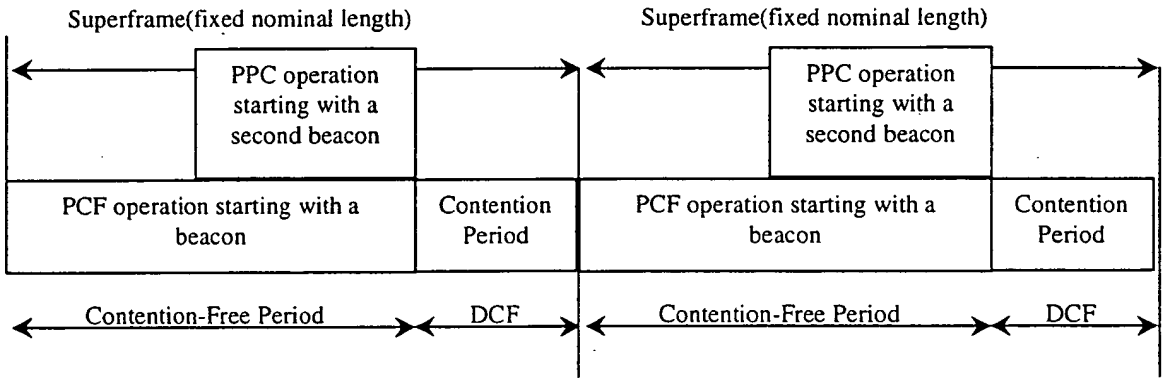


Figure 6. Operation PPC within the CFP of a PC

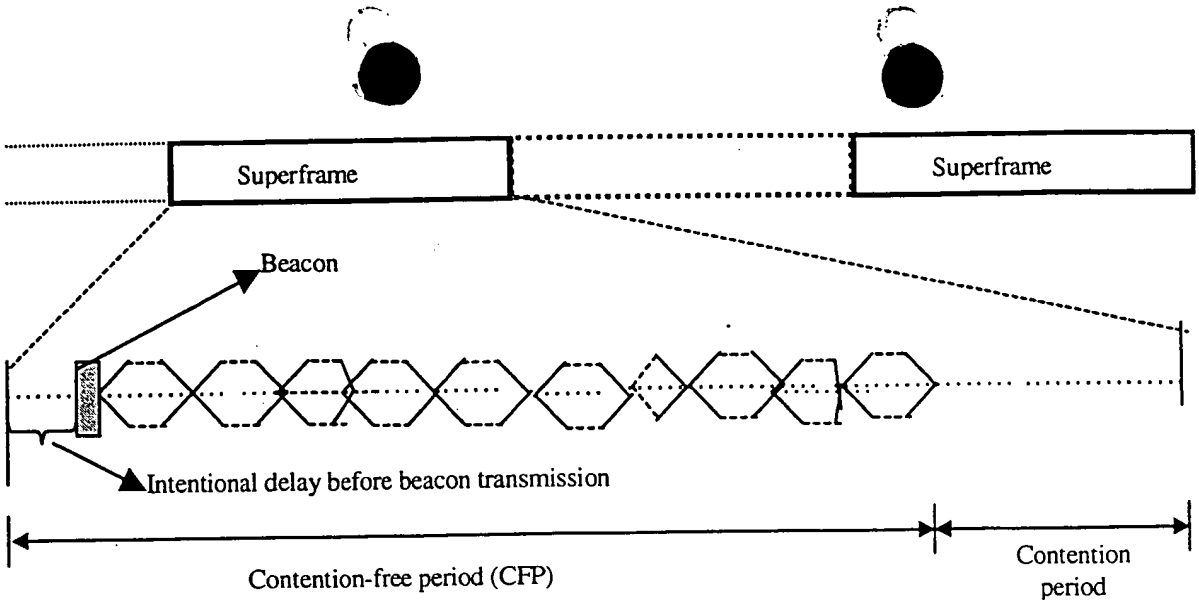


Figure 7. Transmissions of each MMSs in a superframe

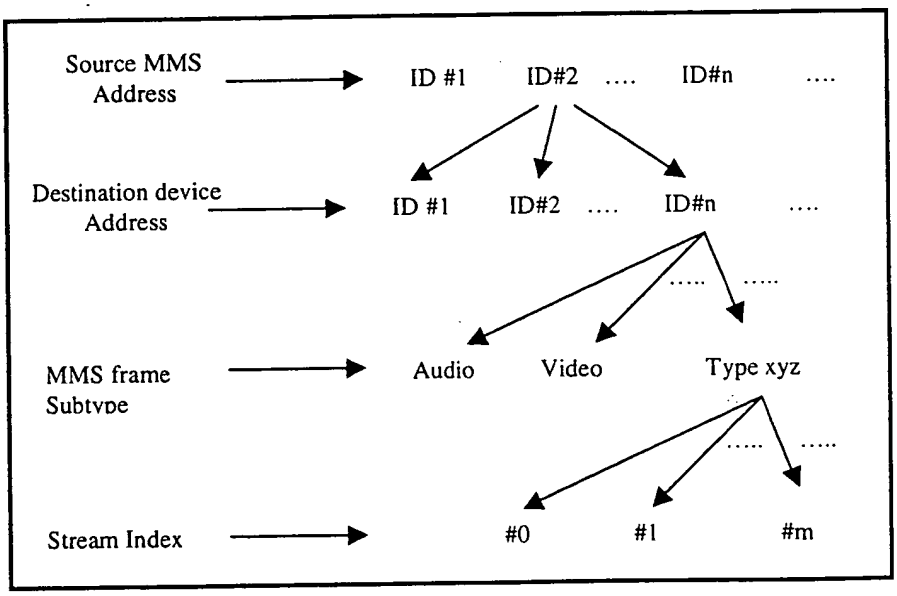
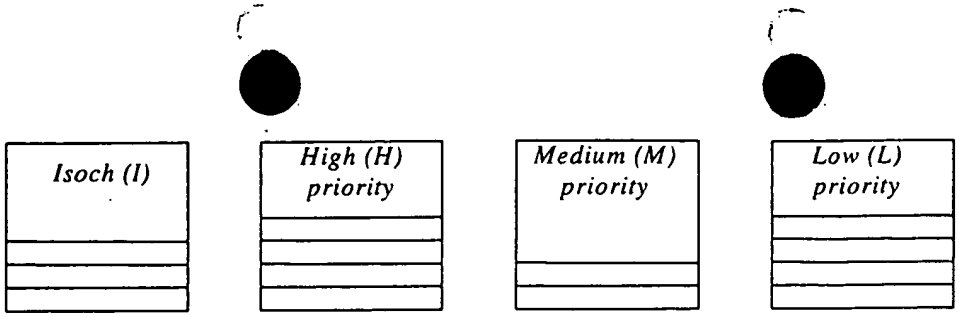
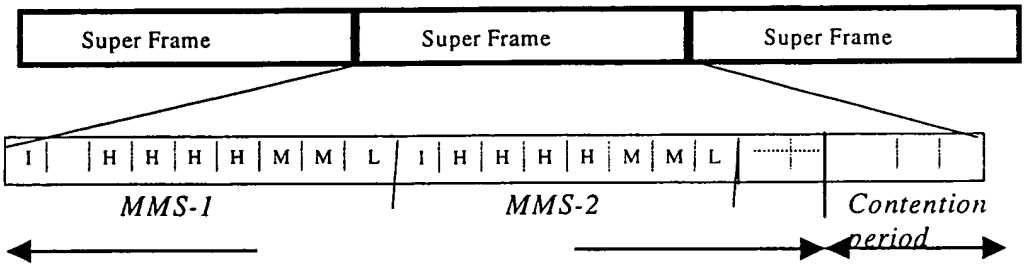


Figure 8. Proposed Data stream hierarchy



(a) Data for packets are collected and sorted into buffer queues according to payload differentiation



(b) Packets are then transmitted according to an arbitration scheme

Figure 9. Proposed Priority Services for multimedia streams

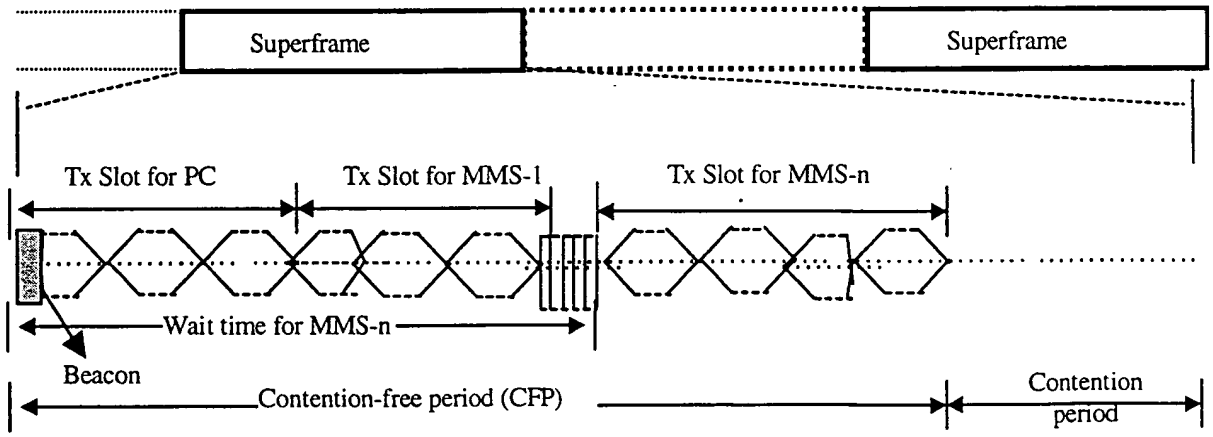


Figure 10. Transmissions of each MMSs in a superframe

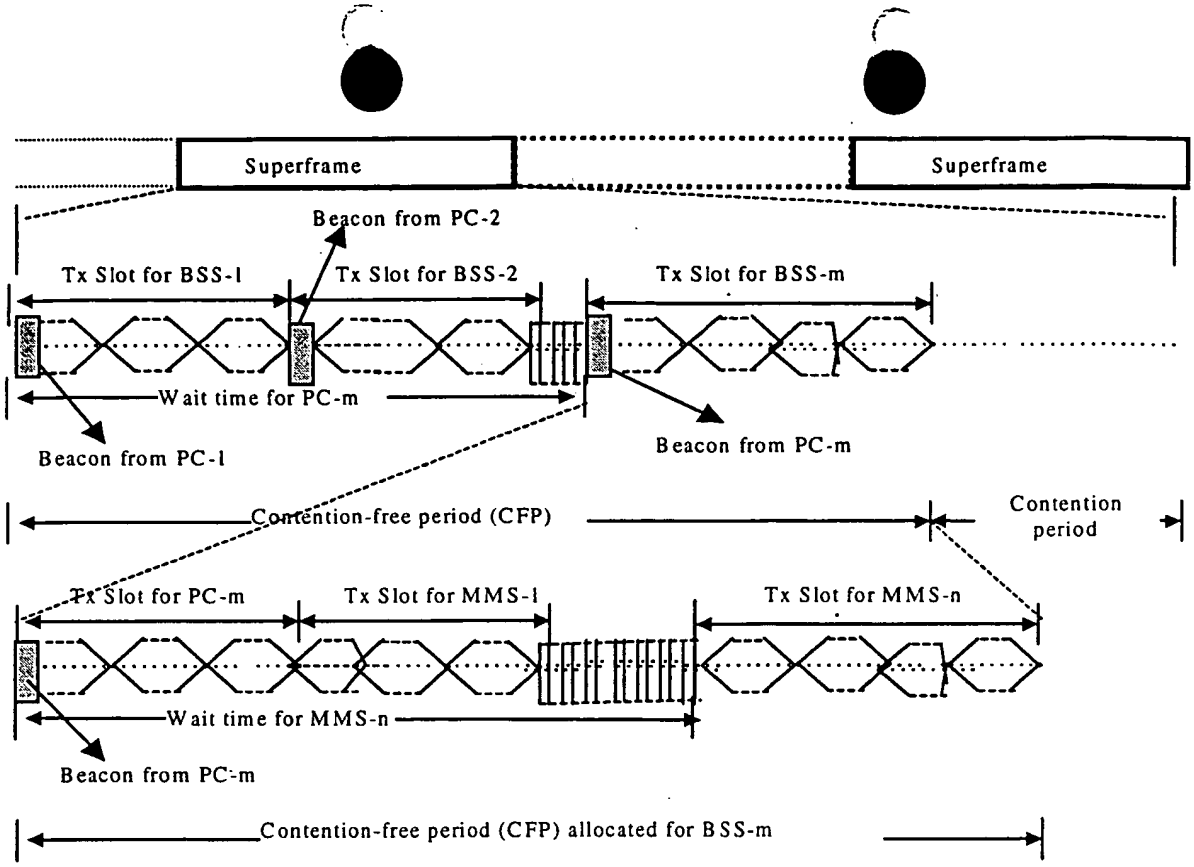
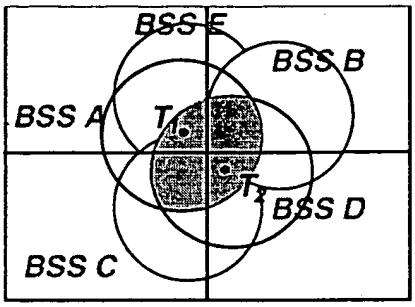
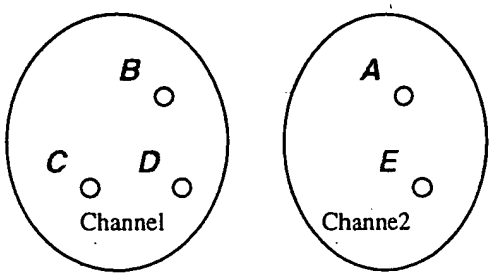


Figure 11. Transmissions of each BSS in an overlapping scenario



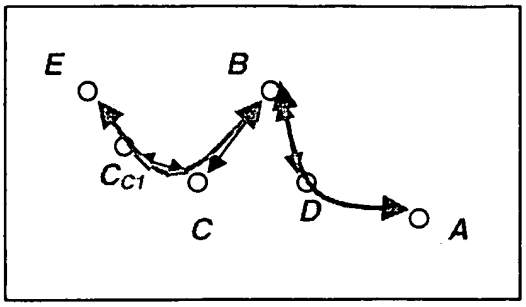
(a) Physical location: BSSs A, B, C and D are in one plane and BSS E is in another plane



(b) Logical location: BSSs B, C and D share channel-1and BSSs A and E share channel-2

- *BSS B comes up first and assumes all zero BSS-SID in channel 1 with 10%bandwidth utilization*
- *BSS A comes up next and assumes all zero BSS-SID in channel 2 with 80% bandwidth utilization*
- *BSS D comes up:*
  - *Detects both channels being busy*
  - *Detects channel-1 with low bandwidth utilization and*
  - *Requests 30% bandwidth in channel-1*
  - *BSS B and D share Channel 1 with 10% and 30% bandwidth usage respectively*
- *BSS C comes up:*
  - *Detects both channels being busy*
  - *Detects channel-1 with low bandwidth utilization and*
  - *Requests 40% bandwidth in channel-1*
  - *BSS B, C and D share Channel 1 with 10%, 40% and 30% bandwidth usage respectively*
- *BSS E (not shown in picture) comes up:*
  - *Detects both channels being busy*
  - *Detects channel-1 and channel-2 with approximately same bandwidth utilization*
  - *Detects channel-2 with lower umber of BSSs*
  - *Requests 40% bandwidth in channel-2.*
  - *BSS A and E share Channel 2 with 60% and 40% bandwidth usage respectively*

Figure 12. Overlapping BSSs sharing the same channel in an example of two channel PHY medium



- *BSS B comes up first and assumes all zero BSS-SID*
- *BSS D comes up next and requests bandwidth sharing with B*
- *BSS C comes up next and requests bandwidth sharing with B and D*
- *BSS A comes up:*
  - *BSS B can not detect A and/or A can not detect B*
  - *BSS D detects both and reports to B that A is operating in the same channel*
  - *B assigns D to be proxy coordinator and sends response to the request of D for bandwidth sharing.*
  - *D acts as tunnel between B and A.*
  - *A gets a invitation from B to join the already group existing group of B, C and D.*
  - *A gets assigned an BSS-SID and the synchronization parameters with respect to D's transmission of beacon.*
- *BSS E comes up:*
  - *Except C_{cl}, no other device can detect E and or otherwise*
  - *E tries to use another channel and fails*
  - *There is only one option to E and that is to join the same group formed above, else it will be interfering with C_{cl}.*
  - *C_{cl}.detects request from E and reports to C that E is operating in the same channel*
  - *C tunnels the information to B.*
  - *B assigns C_{cl} to be proxy coordinator and sends request to C for permission.*
  - *C agrees to the request and provides the permission.*
  - *C and C_{cl} together form a tunnel between B and E.*
  - *E gets assigned an BSS-SID and the synchronization parameters with respect to C_{cl}'s transmission of first packet.*

Figure 13. Operation of a proxy-coordinator